

A new genus and a species of Notodontidae (Lepidoptera)

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Abstract A new genus, *Mangea* Kishida, and a new species, *Mangea gemina* Kishida et Kobayashi, are described in the Notodontidae from Taiwan. Two new combinations are proposed: *Mangea beta* (Schintlmeister, 1989) and *Mangea belosa* (Wu et Fang, 2003).

Key words New genus, new species, *Mangea*, *Trigea*, *Mangea gemina*, *Mangea beta*, *Mangea belosa*, Taiwan.

Acronym. NSMT: National Science Museum, Tokyo.

Matsumura (1934) erected the genus *Torigea* based on the type species *Bireta plumosa* Leech, 1889 from Japan, which has characteristic feather-like antennae. Its forewing has a straight termen and straight dorsum, making its tornus angulated. Schintlmeister (1989) described a new *Torigea* species, *T. beta*, from China, Zhejiang on the basis of two males in the Höne collection. Wu & Fang (2003) described a similar species to it, *T. belosa*, from China, Yunnan. We have found two males of an interesting species from Taiwan in the NSMT collection, which seems to be a new sister species of the latter two.

The shape of wings, wing venation and genital structure of *beta*, *belosa* and a new Taiwanese species are unique and different from those of *Torigea plumosa* and the other *Torigea* species. We describe a new genus *Mangea* for the reception of these three species with the new Taiwanese species, *Mangea gemina* as its type species. We also transfer the above-mentioned two species to the genus *Mangea*.

Mangea Kishida, gen. nov.

Type species: *Mangea gemina* sp. nov.

Male. Antenna bipectinate. Forewing elongated, costal length about twice as long as termen. Tornus less angulated, rather smoothly curved. Termen slightly convex.

Venation (Fig. 2). R_1 arising from radius near discoidal cross. R_{2-5} stalked, R_5 branching off firstly half way between discoidal cross and termen, then R_2 diverging from R_{3+4} .

In *Torigea plumosa* (Figs 3a–d), R_1 arises as in *Mangea*, but an areole is present between R_{2+3} and R_{4+5} ; R_{2+3} arises immediately before the discoidal cross, then R_{4+5} arises shortly distal to the discoidal cross, separating M_1 ; R_{2+3} touches R_4 or R_{4+5} at the midway to the termen, making a slender areole. After the point of meeting, we found four variations in the divergence. We checked seven specimens of *Torigea plumosa* from Japan. Four of them have the venation illustrated in Fig. 3a: R_{2+3} touching R_4 , stalked for a while, then R_2 branching off. The other three have the venations illustrated in Figs 3b–d, respectively. Figs 3b–d: R_{2+3} touching R_{4+5} . Fig. 3b: R_2 and R_5 branching at this point. Fig. 3c: R_5 branching at this point, then R_2 branching. Fig. 3d: R_{2+3} and R_{4+5} stalked for a while, then R_5 branching, the next R_2 . Sc, M_{1-3} , CuA_1 , CuA_2 , and A_{1+2} identical in *Mangea* and *Torigea*.

Male genitalia. Uncus with a notch at distal end. Socii styloid. Valva small and triangular with saccular projection well sclerotized, styloid, having pointed apex. Aedeagus cylindrical, rather short, not tapering caudad. The caudal part of 8th sternite and tergite bifurcating.

Female. There is little information about the female of *M. gemina* and the two other congeners below transferred: *M. belosa* (Wu et Fang) is only known from the holotype male, and *M. beta* (Schintlmeister) was described on the basis of two males from China, and later 13 males were recorded from Vietnam. Wu (2003) recorded one female from China, but no description was given for the female.

Etymology. '*Mangea*' is derived from 'Mangekyô' meaning kaleidoscope in Japanese. The gender of *Mangea* is feminine.

'Mangekyô' is a compound word consisting of 'Mange', meaning 'ten thousands flowers', and 'kyô', meaning scope. 'Mange' is also a compound word and the etymons are 'man', meaning 'ten thousands', and 'ge', meaning 'flower'. Meanwhile 'ge' has two other meanings. 'Ge' is the euphonic change of 'ke', which usually occurs at postfixing: 'ge', *i. e.* 'ke', means hair, feather or disguise, change, variation.

So we can sense the three meanings in 'mange': ten thousand flowers, ten thousand feathers and disguise in ten thousand ways. In the case of '*Torigea*' derived from 'torige', 'tori' means bird, 'ge' means feather, so the compound word 'torige' means bird's feather, which gives a picture of the antenna of the nominotypical species, *Torigea plumosa* (Leech, 1889). The gender of *Torigea* is feminine.

***Mangea gemina* Kishida et Kobayashi, sp. nov.**

Male (Fig. 1). Wing span 41 mm. Forewing length 21 mm. Antenna bipectinate. Thorax yellow. Abdomen pale yellow, long. Forewing ground color yellow, speckled brown. Dark brown fleck near apex. Reniform stigma white with fleck dark brown outside. Post- and antemedial lines consisting of black dots. Terminal line black dot in every cell. Two conspicuous black round spots in the middle field, one on the dorsum, the other posterior to Cu stem. Hindwing pale yellow.

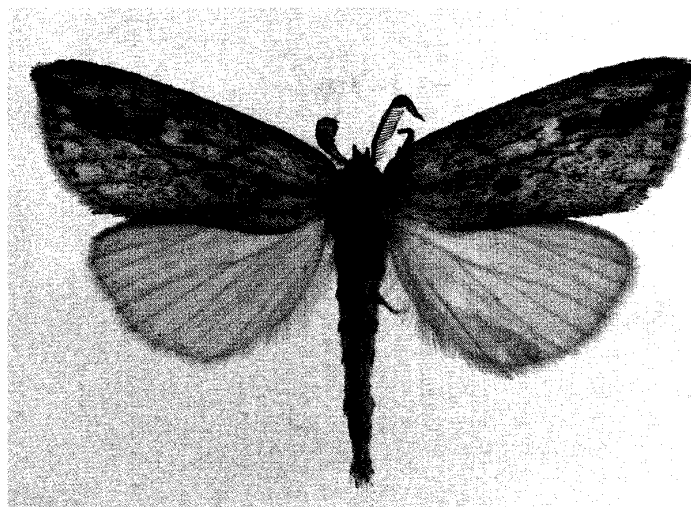


Fig. 1. *Mangea gemina* gen et sp. n., holotype, ♂.

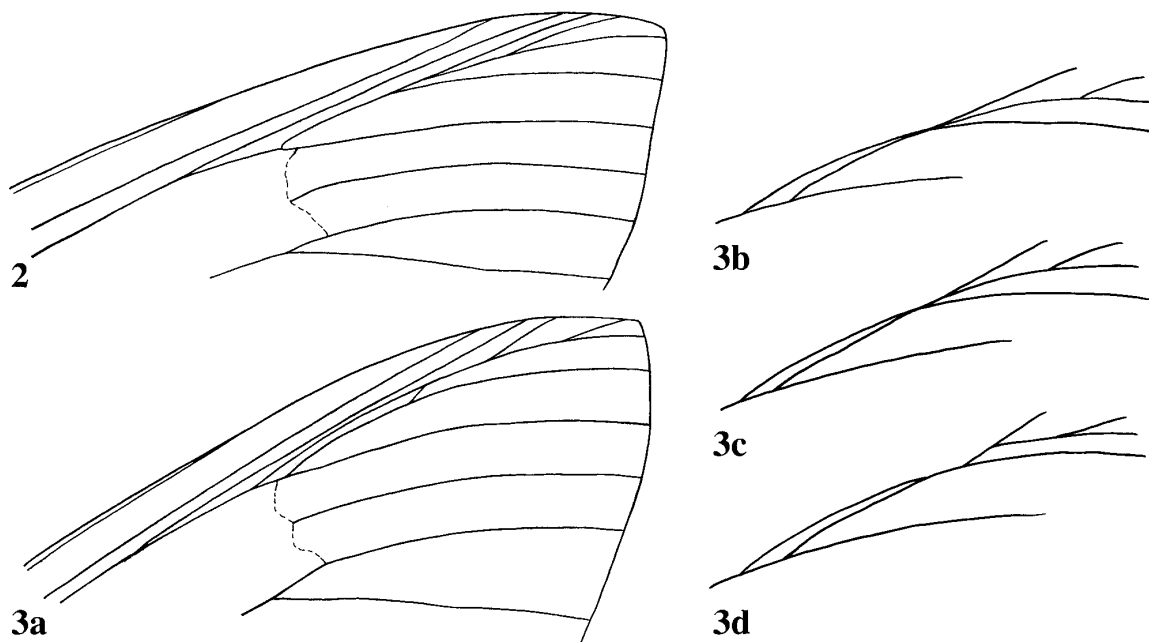


Fig. 2. Wing veins of *Mangea gemina* gen. et sp. n.

Fig. 3. Wing veins of *Torigea plumose* (Leech) (a-d show some variations).

Venation (Fig. 2). As stated for the genus.

Male genitalia (Fig. 4). Uncus oblong with a notch at distal end. Socii small, styloid, slightly curved outwards with margin smooth, fused at base. Valva small, slender and triangular with saccular projection long, smooth, slightly curving dorsad, pointed at end. Aedeagus cylindrical, no ornamentation. Caudal part of 8th sternite with two pointed ends turning outwards, shallowly concave between them. The caudal part of 8th tergite also with two pointed ends, shallowly concave between them.

Holotype. ♂, Taiwan, Nantou Hsien, Lushan spa, 1,200 m, 9–10. iii. 1985, K. Yazaki leg., genitalia slide No. HK912, deposited in NMST. Paratype. 1 ♂, Taiwan, Nantou Hsien, Lushan spa, 1,200 m, 29–30. iii. 1982, H. Yoshimoto leg., genitalia slide SS4369, deposited in NMST.

Etymology. ‘*Gemina*’ means ‘double’, and is an adjective in the feminine gender, nominative singular. *Mangea gemina* has two conspicuous black spots in the middle field of the forewing, one on the dorsum, the other posterior to the CuA stem. These double black spots easily identify the new species described here from the sister species.

We propose two new combinations. The ground design of the genitalia is the same as those of *M. gemina*. And the venation of *M. beta* is the same as *M. gemina*. We have not studied the venation of *M. belosa*.

***Mangea beta* (Schintlmeister, 1989), comb. nov.**

Torigea beta Schintlmeister, 1989, *Neue ent. Nachr.* **25**: 107.

Torigea beta: Schintlmeister, 1992, *Nach. ent. Ver. Apollo* (Suppl.) **11**: 73, figs 150, 151; Schintlmeister, 1997, *Entomofauna* (Suppl.) **9** (4): 77, pls 12: 1, 2; Schintlmeister & Fang, 2001, *Neue ent. Nachr.* **50**: 10; Wu & Fang, 2003, *Fauna sinica* (Insecta) **31**: 248, fig. 142.

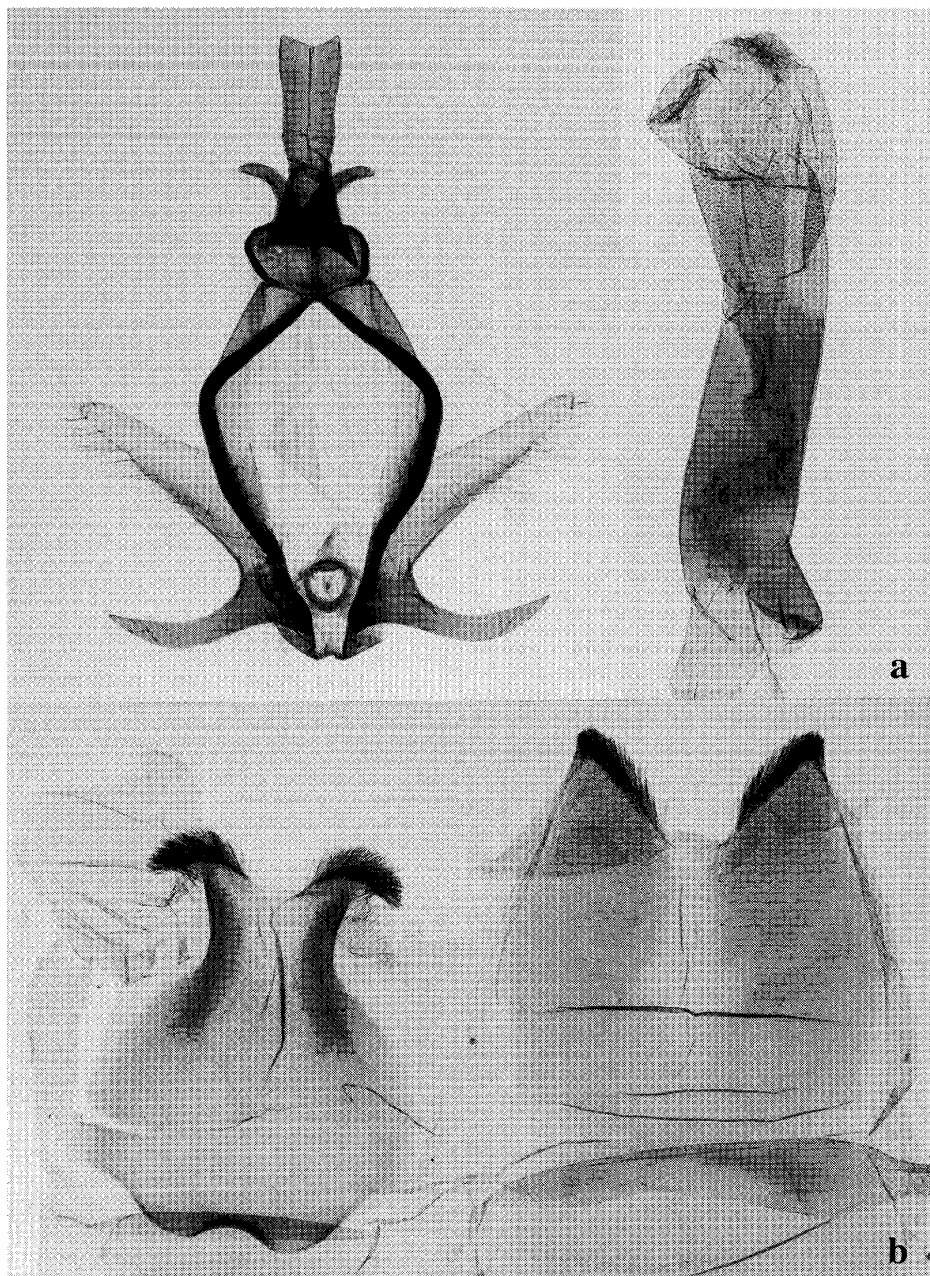


Fig. 4. Genitalia of *Mangea gemina* gen. et sp. n., holotype, ♂ (a: aedeagus, b: 8th sternite and 8th tergite).

***Mangea belosa* (Wu et Fang, 2003), comb. nov.**

Torigea belosa Wu & Fang, 2003, *Fauna sinica* (Insecta) **31**: 249, fig. 143, pl. 2: 6.

Diagnosis

The three species, *Mangea gemina*, *M. beta* and *M. belosa* have a similar external appearance and genitalic structure. The simplest point for diagnosis is that *M. gemina* has a distinct black spot on the middle of the dorsum, which is lacking in the others. So *M. gemina* has two conspicuous spots with the one below the CuA stem. They are easily identified on the basis of the male genitalia. In *M. beta*, the middle part of the uncus is

narrow, the notch being deeper. A small bulge with serration is present on the ventral side of the valva, and the saccular projection curves more acutely. The caudal part of the 8th sternite is bifurcate, producing a deep valley between them. The caudal part of the 8th tergite is also bifurcate with a deep valley between them. In *M. belosa*, the socii are thicker and serrated ventrad. The valva is not so slender as in *M. gemina*. The saccular projection has a serrated margin on the dorsal side. The caudal part of the 8th sternite has two ends, and is not pointed. In *M. gemina*, the dorsal side of the saccular projection of the valva is smooth. The features of the 8th sternite and tergite are as described above.

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摘 要

台湾産シャチホコガの新属新種の記載 (小林秀紀・岸田泰則)

Mangea gemina gen. et sp. nov. を台湾南投縣廬山温泉より記載した. *Torigea beta* Schintlmeister, 1997 と *Torigea belosa* Wu et Fang, 2003 を *Mangea* へ移した: *Mangea beta* (Schintlmeister, 1997), comb. nov., *Mangea belosa* (Wu et Fang, 2003), comb. nov.

この新属は *Torigea* とは交尾器と翅脈で区別でき, 新種 *Mangea gemina* と *M. beta* と *M. belosa* が属する. *M. gemina* では前翅中程に2つの黒斑を持つことで, 1つしか持たない他の2種と区別できる. ゲニタリアでは *M. beta* とは第8腹板と第8背板が大きく違う. *M. belosa* とは *socii* と *sacculus projection* に明らかな違いを認める.

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